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ABSTRACT

The Human Resources and Demographics staff study for the Joint Economic Committee's Special Study on Economic Change presents demographic data to support the position that it will take a strong economy to enable the United States to utilize its human resources. Data are presented, in narrative format, on fertility, population, characteristics of the labor force, and the structure of employment. The statistics indicate that lower birth rates, slower population growth, and the aging of the American society will characterize the 1980s and will change the complexion of the work force and the employment structure of the nation. Recommendations for policy formation are included. (MK)

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Human Resources & Demographics:

Characteristics of People and Policy

Joint Economic Committee

Special Study on Economic Change

A staff study

November 1980

U.S. DEPARTMENT OF HEALTH
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The Joint Economic Committee's Special Study on Economic Change (SSEC) was inaugurated under the leadership of then Chairman Richard Bolling (D.-Mo.) and Vice Chairman Hubert H. Humphrey (D.-Minn.), together with Senator Jacob K. Javits (R.-N.Y.), ranking Minority Member.

The study progressed through Mr. Bolling's chairmanship and into the leadership of Senator Lloyd Bentsen (D.-Tex.), chairman; and Congressman Clarence J. Brown (R.-Oh.), ranking Minority Member. The goal of the SSEC is to chart the major changes in the economy and to analyze their implications for policymakers.

Volumes of the Special Study on Economic Change

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CHAIRMAN'S INTRODUCTION

Senator Lloyd M. Bentsen

Chairman, Joint Economic Committee

Through a combination of economic and demographic circumstances, America now has an opportunity to prepare for what could be the greatest long-term demonstration of productivity the world might ever witness.

The "baby boom" generation is maturing into prime age workers (25-45 years old). But their productive potential -- and the Nation's -- can be realized only if we adopt policies that make it possible to equip these workers with the best and most modern tools, technology and knowledge. If we fail to invest in the necessary quality and quantity of equipment and skills, the high expectations of American workers will be stymied as they are forced to compete for too few jobs in a stumbling economy.

With these prospects in mind, the Human Resources and Demographics staff study for the JEC's Special Study on Economic Change treats the Nation's foreseeable future not in cold, statistical terms -- as studies of demographics are prone to do -- but in human terms. When the numbers are sorted out, the message of this study is that it will take a strong economy to enable America to utilize its greatest asset -- its people.

Accompanying almost every statistic in the study is a current or future policy implication. For example:

- The tide of would-be workers entering the labor force will continue to grow during the 1980's by about 1.25 to 1.5 percent a year. During the 1970's about 19 million new workers -- mostly women and young people -- joined the employment rolls, which were more than the number of people added to the Nation's population. Policies that encourage investment in new plant and equipment will be necessary if people who want to work in coming years are to find stable, private sector jobs.

- As millions of Americans reach prime working age in the 1980's, they are expected to form households at a rate of nearly 1.8 million a year -- 300,000 more annually than in the 1970's and 800,000 more per year than in the 1960's. While a stronger economy would benefit all citizens, it will be especially necessary to those persons attempting to realize an American tradition, homeownership.

- Education institutions which now face dwindling enrollments have a fresh challenge. Continuing education can prepare adults for career changes or for maintaining and improving present career status. As technology alters the workplace, education can be one means of staying abreast of new discoveries and developments. Education and job training programs can best serve Americans if they are structured to lead to jobs in growth sectors of the economy.

- There are now five persons of working age to each person over the age of 65. By the year 2030, however, that ratio is expected to narrow to a one-to-three basis. Traditionally, current workers have helped to provide sound pensions for retired workers. If that bond between generations is to continue, policies must be adopted now that will provide workers with the new tools, technology and skills necessary to increase productivity.

During the 1980's improved cooperation among labor, business and government will be imperative if we are to make and implement policies to achieve the Nation's social and economic goals. A stagnant economy and high inflation obstruct job creation and improved living standards, as well as undermine the retirement income of millions of Americans.

We must encourage and include all human and capital resources in our efforts to realize America's productive potential. The alternative simply is not acceptable.

Ranking Minority Member's Introduction

CONGRESSMAN CLARENCE J. BROWN

The extraordinary potential of human resources in the United States, their rich diversity, skills and versatility are a critical determinant of American progress in the decade ahead. The Human Resources section of the Special Study on Economic Change clearly documents how changes in the size, composition and quality of American labor affected economic performance in the 1970's and elaborates the prospects for the 1980's.

Demographic changes will fundamentally alter the supply of human resources in the coming decade, according to the Human Resources research findings. The Post-World-War II baby boom, coupled with the much more active role of working women, brought a flood of over 22 million new entrants to the American labor market in the 1970's. That bulge, which exacerbated the unemployment problem of the past decade, will become a more mature, experienced and productive pool of workers in the coming decade. At the same time, the number of young people seeking work will decline substantially as a direct result of the drastic drop in birth rates in the 1970's. Thus, these age and quality characteristics of the labor force are expected to contribute favorably toward better productivity performance in the 1980's. Still, as this report indicates, we must count on continued, sizable growth in new job seekers, albeit at a substantially lower rate.

These prospects, then, underscore the need for Congress to adopt measures which stimulate capital formation, encourage technology change and innovation and to promote higher national saving to finance the necessary investment. These are the key prerequisites to better economic growth which will sustain our standard of living and enhance our competitiveness in the world economy.

Even with appropriate macroeconomic policies favoring accelerated investment and growth, the Nation's economy faces serious structural adjustments in major industries. The problems of the steel, auto and energy industries will present difficulties for many workers to overcome. In other cases, technology changes will

lead to demands for new industrial skills. Meanwhile, the Nation's economy is growing increasingly oriented toward services -- which employ two-thirds of the Nation's labor force and were the source of nine out of ten new jobs during the 1970's.

Macroeconomic stimulus in the past has failed to alleviate unemployment stemming from structural change. Therefore, the Congress is challenged to strengthen, as this report urges, selective measures to attack structural unemployment. Targeted programs should be developed for retraining workers and locating jobs. Programs that emphasize the contribution of community-based organizations in locating, training and finding employment for the structurally unemployed must be expanded. Manpower programs should be coordinated with new capital formation to avoid bottlenecks of critical skills. Employer incentives, such as training subsidies, should be provided to meet unusual costs of hiring unskilled and inexperienced workers. As this report emphasizes, minority youth will continue in the 1980's to face severe unemployment problems. Targeted employment programs, then, will come directly to the aid of these workers who have suffered so disproportionately from stagflation and poor macroeconomic policies in the past.

This study correctly recognizes the key role of millions of small businesses as the historical backbone of growth in private sector employment in the United States. Congress should press ahead with better measures to stimulate investment and job creation in grass-roots business.

One important demographic finding bears on U.S. defense posture as well as on economic performance. As the pool of young people shrinks in the 1980's, military recruiters will have to compete with private sector employers to fill the armed forces manpower requirements. Congress will have to review seriously military pay and benefits relative to remuneration in the private sector if high quality, voluntary armed forces are to be maintained over the long term.

HUMAN RESOURCES AND DEMOGRAPHICS:

Characteristics of People and Policy

I

INTRODUCTION AND RECOMMENDATIONS

Human, physical and natural resources will be altered in the decades ahead in response to a number of influences. Rising energy prices, new technology, changing consumer tastes, shifting terms of trade and increasing international competition will create imbalances in a rapidly changing labor market that will entail considerable adjustment by workers, industry and government.

Through all this, policymakers should remember that optimum utilization of human resources is vital to the economic future of the United States and to the individuals who compose the human resources pool. An improved standard of living and increased quality of life can best be realized through the most efficient use of all resources.

Additionally, human resources -- combined with long-term investment in physical resources and beneficial use of raw material -- can help the United States meet the challenges of changing economic developments.

The period 1980 to 2000 will require cooperation among labor, business and government in the development of policies that build consciously toward a healthy, competitive and efficient productive structure. Policy implications drawn from shifting demographics and modifying values of life are aimed as much at private industry as at opportunities for government solution. Therefore, implications of this section are as much for the consideration of the private sector as they are for the public sector. Government, labor and business each has a role for contribution.

It is imperative that America's vision -- from the corporate boardroom to the cloakrooms of Congress -- shift toward a long-term, anticipatory framework, rather than a short-term, reactive one. Central to this approach are measures aimed at raising the productive potential of the United States. A stagnant economy and high inflation rates are the major obstacles to the full employment policies that are the best hope of millions of Americans who are currently unemployed or underemployed -- many for reasons beyond their control. Strong economic growth will help create the jobs needed over the long run to provide employment opportunities for those willing and able to work.

Energy prices have increased dramatically and the United States is now importing more goods than it exports -- both factors which have contributed to rising inflation. Tax and regulatory policies of the United States, too, have aggravated the problem by discouraging productive investment. As energy and production costs have gone up, labor has been substituted for energy and for physical capital -- at the expense of investing in new plant and equipment for the long term. Lack of investment in plant and equipment leads to inefficient use of resources.

Human resources -- as with plant and equipment -- can be inefficiently utilized, or not used at all. The amount of goods and services produced will not be as great as it could be unless human resources, along with physical and natural resources, are fully utilized. Therefore, the attained gross national product of the United States will be less than the potential GNP unless specific goals are successful.

- Educational programs should be geared to meet the needs of a changing society. Goals should be:

1. To reduce illiteracy and increase the opportunities to acquire basic skills.

2. To structure college education programs so they will prepare students for entry into the labor market and for multiple careers during a lifetime.

3. To provide vocational programs which match skills and training to the needs of the workworld. College education will continue to be important in coming decades, but evidence suggests there will be serious needs for persons with skills requiring alternatives to formal arts and sciences education.

4. To expand intern programs to give students in college and vocational programs opportunities for actual experience in work situations. Students often find that jobs do not meet their classroom expectations -- many times resulting in waste of the preparation years, another inefficient use of human resources.

- Efforts need to be directed toward ending discrimination which still limits both educational and employment opportunities for minorities, women, handicapped and older workers.

- Underlying issues which result in minority unemployment should be addressed. These issues include inadequate basic education, training and employment needs, and other labor market difficulties.

- The public and private sectors should support efforts to broaden occupational choices for women and to encourage their entry into less traditional fields.

- Policies should be aimed at assisting in the adjustment of workers displaced because of technological change or international

competition. These policies should be directed toward retraining and reemployment in growth sectors, rather than exclusively as supplementary unemployment insurance.

This policy implication is not to suggest that policy directed at retraining and reemployment in the growth sectors is the only course. It is to suggest, however, that policy should concentrate on, and emphasize, the merits of a national goal to best utilize resources in the growth sectors and to improve national productivity performance.

The labor force of the United States is expected to grow at an annual rate of 1.25 to 1.5 percent during the 1980's with labor force growth slowing to less than one percent during the 1990's. All workers, however, are not expected to be fortunate enough to find themselves in the growth industries of the immediate and long-term future. Rapid changes are anticipated in technology and in the composition of international trade. Some of America's workers will be affected more than others by the resulting shifts in particular industries. The changing terms of trade, rapid dissemination of technical knowledge, lack of market response by corporate executives, foreign government subsidization of their domestic industries and unintended consequences of tax and regulatory policies already have led to a decline in some industries. These forces are likely to continue in coming years and probably will accelerate in some instances.

Various kinds of assistance may be appropriate responses for some affected industries -- particularly for those in decline which are important for national security reasons and for those facing competition which U.S. national policy judges to be unfair. Protection and subsidies, however, can prove counterproductive for other affected industries. Protection only delays the inevitable if the decline in the industry is attributed to changing consumer tastes, input prices or perpetuation of obsolete and inefficient production techniques. To allow industries to decline, however, would impose costs on the industries' workers, management, owners, and the national economy.

The Federal Government can reduce the impact of declining industries on the United States and its human resources by expanding current adjustment assistance programs. The emphasis of the programs should be on retraining and reemployment of displaced workers and on financing assistance to companies.

Some labor management agreements have moved already in the direction of adjustment assistance for their workers; some contracts give workers the right to bid on jobs in other plants of the company in the event of an extended layoff or a plant closing. In various instances, this right is accompanied by help with moving

expenses for such relocation. Certain companies also provide tuition aid programs for upgrading worker knowledge and skills.

An effective adjustment assistance program should encompass more than the retraining and re-education process. It needs to be complemented by a strong linkage system between labor market demand -- which is governed by changing technology and product market conditions -- and the skills and knowledge that workers obtain through specialized manpower programs.

A strong adjustment policy would recognize that instantaneous adjustments are impossible. This is because both the retraining process and market conditions affecting industries' requirements for labor go through long-term stages of development and change.

For these reasons, efforts to best utilize human capital require a system which -- so far as possible -- anticipates technological and product market changes. A perfect system which anticipates all problem areas cannot be expected. However, a system which waits for problems to reach the point of no return before responding to them is not acceptable -- both because of economic losses and human suffering caused by unemployment.

Policy will always have to remain flexible in order to respond, even in hindsight, to unpredicted problems of a troubled industry. While realizing that, however, the better course is an overall strategy which looks beyond the short-term horizon toward an understanding of unfolding technology and market conditions, and which integrates job training and other programs. To design such a strategy, Congress should designate an agency to work with representatives from business, labor, academic institutions and government:

- To produce appropriate technology and market forecasts. These forecasts would be used to design specific policy proposals.

- To determine -- to the extent possible -- the impact of technology and market developments on industrial growth prospects for use in forming sectoral policies.

- To determine -- to the extent possible -- what kinds of training and retraining needs will develop in the future in order to assist workers who face potential displacement because of shifts in particular industries.

At the same time America seeks to improve the use of its human resources, the future will require innovative means to assist in the *development* of human capital. Possibilities include:

- Broad scale development of childcare facilities whether through efforts of the public or the private sector -- or a cooperative combination. Working mothers, numbering between 7 and 8 million in 1990, are expected to have 10 to 11 million children under age

six -- youngsters who will need child care while their mothers work. Estimates are that there will be 34 million children in the school-age bracket of kindergarten through grade eight in 1990, and many of their mothers will work. Working women are encountering increasing problems in the childcare area and the trends in lifestyles and custody cases indicate it may be men as well as women who face the childcare problem in the future more than in the past and present.

- Consideration of changes in the current military recruiting system. Lower fertility rates will result in the future in reduced numbers of young males, the group from which the military traditionally draws its new members. As the pool of young people shrinks, consideration may turn to options of how to divide resources between military and civilian uses -- ranging from a totally voluntary military effort to mandatory service. Under the current system of the U.S. military, several groups of young people are not considered qualified and available for service. For example, from a 1990 pool of 10.6 million 17-22 age males, about 4.6 million will be considered not available for service because they will be in college. Another group of young people -- females -- has not been utilized extensively by the military. Improved pay scales, greater opportunities for promotion and restructured retirement plans could encourage more and longer attachments to the service. Demographics may mandate changes in thinking on this issue.

- Incentives to induce older workers to remain on the job. As the pool of younger workers decreases in size, older workers may play an even more vital role in the U.S. economy. To benefit from the experience and skills of this increasingly larger segment of the population, less stringent Social Security and pension restrictions may be necessary. Other options available for retention of older workers include delayed or phased in retirement, more flexible work schedules and personnel policies which consider the older worker.

- Development of a preventative health maintenance program to increase the contributions which human resources can make. With the advances already made in the cure of specific diseases and illnesses, attention in the future could focus in the preventative area. Investments in preventative health care could prolong the contributions of all individuals, regardless of age.

- Review of the Social Security law. The law was designed when most American women were lifelong homemakers. Over half the U.S. women presently work outside the home and their numbers are expected to increase. Social Security benefits under current law are not as favorable to the family where both the husband and wife work as they are to the one-earner family. Planning now can set the stage for long-range changes in the law to better reflect lifestyle

shifts in America. Long-term revisions should not disrupt the retirement plans of millions of people whose expectations are based on the present system.

- Consideration of income tax law changes. Under present law, marriage increases the tax bill for many couples when both spouses work. Although more women work outside the home than ever before in American history, there is some evidence that this marriage penalty discourages some women from working altogether and reduces the number of hours worked for others. Because lower fertility rates are expected to produce fewer prospective workers, women may become even more important to the labor force of the future. The removal of marriage penalties in the income tax law could maximize benefits from this pool of human resources.

Policymakers will have to determine which issues merit priority for the future -- issues ranging from child care, older workers, Social Security law, military recruiting, income tax provisions to preventative health care. However, decisions on programs for minorities and education appear to be more imminent.

Minorities -- particularly minority youths -- will continue to face unemployment and labor market difficulties over the coming decade, unless steps are taken to meet their special needs. As a result of inadequate basic education, poor or non-existent job skills and discrimination, large numbers in this group have characteristics that generally fail to mesh with the needs of private and public employers. A multi-faceted and coordinated approach will be needed if a successful attack is to be waged against minority -- and other structural -- unemployment.

- First, training and employment programs -- such as those enacted by Congress over the last decade -- will continue to be important in the 1980's. Careful targeting will be necessary to provide assistance to those who need help the most. Youth programs should be integrated where appropriate into the high school education system so that a stronger bridge might be built between the classroom and the job market. Such a program would provide opportunities for significant job training on a part-time basis in local plants, stores, offices and other service establishments. So that job training would not replace, but rather supplement, essential aspects of high school learning, students opting for job training should also be required to continue with the basic elements of the conventional educational curriculum. To complement job training programs -- whether for youth or older workers -- specialized counseling should be developed to ensure that what has been learned will not be wasted and that workers are directed toward available jobs with long-term productive potential.

- Second, manpower programs must be coordinated with new initiatives to increase capital formation, for without suitable jobs in the private sector, training programs will be of only minimal value in terms of long-term, productive employment.

- Third, incentives such as employment tax credits should be continued and, if necessary, expanded to help employers meet any unusual cost of hiring less than fully experienced and productive workers. By placing the primary responsibility for training on employers, the approach offers a direct way of assuring that skill development is matched to available jobs.

- Fourth, since small businesses have historically been the backbone of private sector employment growth, special measures to spur growth in this sector should be considered. Improving the ability of small business to obtain capital for growth and innovation would help open entry level job opportunities -- which are especially important for minority youths -- as well as skilled jobs for older workers.

- Finally, policies which are designed to achieve strong economic growth and expanded employment opportunities for the economy as a whole must be pursued. Evidence has shown that minority unemployment falls more rapidly than white unemployment in times of economic growth. According to a study by the National Commission for Employment Policy, a one percent reduction in the national unemployment rate will reduce the black unemployment rate by 1.26 percent compared to only .99 of a percent for whites. This evidence indicates that sustained economic growth can do much to lessen the discrepancies between the different racial groups in this country in their employment opportunities.

The changing employment market over the next two decades will require from virtually every job seeker competency in basic education, and attention to job-related skills that enable employees to adapt to shifting employment patterns and employment opportunities. Other forms of continuing education, particularly in professions like medicine and law, will likely receive increased emphasis for some time to come.

Should enrollments decline as expected and costs continue to rise, many colleges and universities may be forced to alter their admissions policies. These institutions may have to follow the lead of community colleges which now focus a significant portion of their recruiting on adults returning to school either for self-fulfillment, continuing professional education, to develop increasingly complex skills or for more formal re-education in preparation for career change or enhancement.

The business community may also prove to be a force in what seems to be a growing movement to increased re-education or continuing education as it relates to the workworld. A number of companies have instituted some form of tuition-aid programs under which the company assists or pays education costs for employees. While the response rate on the part of employees has been rather low, limited evidence indicates that if these companies were to promote education programs more aggressively, a greater percentage of employees would participate.

Lower level education, too, will confront problems arising from demographic change and shifting educational needs. At the elementary and secondary level, expected enrollment decreases suggest that the fate of underutilized and empty schools will continue to be an issue in the 1980's. A variety of alternatives to school closings exists which would allow local officials to retain a measure of control over their options should the school age population rise again in the future. Alternatives include conversion to or leasing arrangements with:

- Other governmental entities.
- Centers designed to assist senior citizens or groups requiring special services.
- Vocational training facilities.
- Preschools, day-care facilities and adult education centers.

With the dramatic increase in the number of working mothers and the growing recognition of the importance of intellectual and social development during a child's early years, pressures for the extension of public education to the preschool level will likely increase in the 1980's.

While some of these developments clearly pose problems for educational institutions, others may present opportunities for creative solutions which can benefit both the educational system and the community. As the Nation faces rapid changes in technology and international trade, it will become increasingly important to fully develop and utilize the capabilities and talents of the population. Education will be a key to success in this effort.

The following analysis of changing demographics reflects how lower birth rates, slower population growth and the aging of the American society will likely characterize the 1980's in the United States.

Recognition of the changes should enable government, business and labor to anticipate the problems with greater clarity, and to devise effective solutions.

II FERTILITY

American women gave birth to half as many babies in the late 1970's as they did during the peak of the baby boom years in the late 1950's.

At the crest of the baby boom (1946 through 1964), the fertility rate reached a high of almost 3.8 births per woman. In contrast, the fertility rate fell to 1.8 births per woman during the 1970's -- the lowest rate in America's history -- resulting in a dramatic decrease in natural population growth. (The fertility rate is a measure of the number of children an average woman will bear in her lifetime.)

During the 1946-64 period, there were 76 million live births. In 10 of those years, 1955-64, there were over 4 million births each year. The surge of post-World War II infants brought changes in social, economic and political factors in the United States. The boom babies will dominate the 1990 labor force as middle-aged adults and then in the twenty-first century -- as they become the aging group -- the postwar children will have a marked impact on retirement programs. Even as the fertility rate of 20 years ago continues to have far-reaching effects on the present world, the fertility rate over the next two decades will bring significant developments in the next century.

The fertility rate is a critical element in population and labor force projections. For a stabilized population, a fertility rate of 2.1 births per woman is necessary. With the 1.8 fertility rate of the 1970's, the United States has been below the 2.1 replacement level since 1972.

The Bureau of the Census has prepared population projections based on three fertility rates. The three projections are distinguished as Series I, Series II and Series III. Series I is based on a high fertility rate: the assumption that the average woman will have 2.7 babies during her childbearing years. Series II assumes a replacement level fertility rate of 2.1 births per woman. In Series III, the fertility rate is 1.7 births per woman in the childbearing age group.

The fertility rate in the United States has not been as high as 2.7 since 1966. In 1972, the rate declined to 2.0 births per woman -- below replacement level. Since that time, the rate has been about 1.8 births.

Several reasons may be offered for the reduced fertility rate, but it is believed a major factor is the changing role of women in the United States, especially in the workworld. The 1970's saw massive numbers of females enter the labor force, a trend that should continue through the 1980's. This labor force participation is a prime argument against any near-future increase in birth rates. In addition, there has been a steady decline in the proportion of women marrying by age 24, women are having their first child at a later age, and women's investment in higher education is increasing -- all contributing factors to maintenance of a steady fertility rate. The growth of two-earner families -- partly caused by inflation -- further reinforces the belief that the lower fertility rate will likely continue -- at a level of about 1.9 births per woman for the next 20 years.

Both high and low birth rates have positive and negative effects. Members of the baby boom generation illustrate this. They crowded maternity wards, schools and colleges; they crowded the labor force, raising the unemployment rate for young people. During its middle years, this group will increase the work experience level of the labor force -- a factor which could cause productivity improvement -- and should cause more rapid household formations which would boost the economy.

With a low birth rate, existing schools would not be filled, but for most teenage groups unemployment is expected to ease because there will be less competition for entry level positions. However, in the second quarter of the twenty-first century, retirement programs could encounter problems as projections show only three persons of working age to each person over 65 years old, compared to the current five to one ratio. While program costs for the older segment of the dependent population will increase, support costs for the young dependent group should decrease as that portion of the population declines in size.

III POPULATION

There are two ways in which to add to the total population of the United States -- through natural increase (the difference between the number of persons born and the number who die) and through net immigration. During the 1970's, nearly one out of four persons in the United States was added to the population by legal immigration.

An average of 1.8 million persons annually expanded the U.S. population during the 1970's for a 10-year gain of 17.9 million people. The population increase for the decade amounted to 8.8 percent. By the end of 1979, the population approached 222 million, compared to about 204 million people in 1969. In contrast, population during the 1960's grew 14 percent at a rate of 2.5 million per year -- 700,000 a year more than in the 1970's.

The United States currently admits about 430,000 legal immigrants annually, although larger numbers may be allowed entry through Presidential order. In one year, fiscal 1978, there were 601,442 legal immigrants who entered the country, but in 1979 the number of legal immigrants was 460,348. In contrast to the large flow of immigrants to the United States, about 35,000 citizens leave the country in a year, according to Census Bureau estimates.

Assuming in the 1980's an immigration rate of 400,000 persons a year and a fertility rate of 1.9 births per woman, the 1990 population would be about 240 million, an increase of 8.7 percent during the 10 years. During the 1990's, population growth under this scenario would drop to about one-half percent per year to reach a 2000 population of about 253 million, a 5.5 percent gain for the decade.

If population growth continues to slow, as expected, the relationship of specific age groups to the total population will change -- with the demographic shifts imposing their traits on work and lifestyles. In the United States in 1990, it is expected that:

- One third of the population will be ages 25-44.
- The median age will be 33 years, compared to 30 in 1979.
- About 60 percent of adult women will work or want to work; between half to two-thirds of the new entrants into the labor force will be women.
- One in five persons will be black or Hispanic -- although the minority labor force share will remain at about 12 or 13 percent.
- Twenty-five percent of the population will be under age 17; and 12 percent will be age 65 and over.

While structural shifts in the United States population over the next 20 years give promise to the continuation of stable government, the same cannot be said for rapid population growth projected to occur elsewhere around the globe -- especially in the large urban centers of developing countries, where massive urban crowding is anticipated. The largest urban centers in developing countries are expected to grow almost seven times faster than their counterparts in developed countries, including the United States.

It is anticipated that the largest urban centers in developing countries (centers with more than 5 million people in 1980) will absorb 91 percent increases in population by 2000. The United Nations projects the 17 largest will contain almost 281 million by 2000, roughly double their present estimated size. Mexico City, for example, is projected to grow from 15 million to 31 million over this period.

By comparison, the population of the developed countries' largest centers (those with 5 million or more people in 1980) is expected to increase only gradually. America's largest urban centers (New York, Los Angeles-Long Beach, Chicago, Detroit and Philadelphia) with an estimated 49.8 million people in 1980, are projected to expand to 56.6 million by 2000, a 14 percent increase.

IV

CHARACTERISTICS OF THE LABOR FORCE

Shifts in fertility rates have dramatic consequences on the composition of the labor force.

Nearly one out of three persons living in this country in 1990 is likely to be between the ages of 25 and 44 -- products of America's baby boom. Because of their numbers, these citizens have had an impact on life in the United States since they were born. As the group ages, it continues to leave its mark on America -- and to shape its future. The postwar youngsters are expected to continue to draw much of government's attention through the coming decade.

This generation has already greatly affected schools, youth unemployment, delinquency, teenage markets, colleges and suburban sprawl -- including household formation and installment credit. With work experience in hand, this group is expected to have major influence on companies, unions, consumer markets, politics and public policies.

The median age of the United States population -- 30 in 1979 -- will be 33 in 1990 and will rise to 36 in 2000. The notable factor in the coming decades will be the maturing of the society. Whereas attention in the two prior decades centered on young people, in the 1980's much of it will turn to the 35-45 age group and in the 1990's will likely focus on the 45-55 age group.

Labor Force Size

Both the civilian labor force and civilian employment expanded more during the 1970's than the total United States population -- which increased 17.9 million persons.

The civilian labor force grew by 22.4 million persons from 1970 to 1980, a 27.5 percent increase. As the 1980's began, there were 104 million persons in the civilian labor force which expanded at the rate of 2.45 percent a year during the 1970's. The 1960's labor force had increased 1.7 percent a year.

Civilian employment ranks swelled with 19.1 million additional workers employed from 1970 to 1980. Employment grew at an annual rate of 2.25 percent, totaling 24.3 percent for the 10 year span. The employment gains came during a decade when the country experienced its worst recession (1974-75) since the 1930's.

Women and young people captured most of the employment gains. Of the 19 million new jobs created during the 1970's, 11.5 million were filled by women. One-third of the newly employed were young people, ages 16-25. At the end of 1979, women accounted for 42 percent of the labor force. About 52 percent of the labor force was under age 35.

Projections for future labor force growth are precarious because the total outcome depends on individual decisions made by millions of people. Factors include the female role in the workplace; choices of young people about college, work or military; extension of the worklife for older groups; immigration; and the state of the economy.

The 1970's growth is likely to spill over into the first half of the 1980's with a substantial slowdown anticipated by 1990. Expansion during the 1990's probably will be reduced from the 1980's growth.

The Bureau of Labor Statistics details three possibilities for labor force growth in the next decades. BLS makes predictions based on low, intermediate and high economic growth. Among other factors, the projections are based on an assumption that the number of legal immigrants entering the United States each year will average about 400,000. The low growth prospect is not likely to occur since that prognosis places 114 million persons in the labor force by 1990 -- and there were already 104 million by the end of 1979.

The intermediate forecast of BLS anticipates 119 million people will be in the labor force by 1990, a gain of 14 percent for the decade at a rate of 1.3 percent a year. A high growth rate foresees 126 million persons in the 1990 labor force -- a growth of 21 percent for the decade at 1.9 percent annually.

The year 2000 labor force would total 125 million people in the intermediate economic forecasts of BLS. Under this scenario, the 1990's would experience labor force growth of 4.9 percent -- less than half a percent a year. The high growth rate, as projected by BLS, would place 135 million people in the 2000 labor force -- a growth of 7.2 percent for the decade at .7 percent each year.

The actual path of labor force growth has often diverged considerably from the projections. During the 1970's, for example, women entered the labor force in huge numbers -- a trend which was not projected by forecasters.

Fifty-two percent of working age women were in the labor force in late 1979, compared to 43 percent participation in 1970. The intermediate growth projections of BLS expect this female participation rate to rise to 57 percent by 1990; the high growth scenario calls for a 60 percent women's participation rate by 1990.

More surprising than the failure to detect the surge of women into the labor force, however, were the inaccurate predictions about the entry of young workers into the labor force; surprising because the baby boom which created the labor force flood had already occurred. The 1966 Manpower Report of the President, for example, projected an addition of 14.8 million workers under age 35 to the labor force between 1960 and 1975, while an increase of 19 million actually took place.

Participation rates for men dropped from 78.8 percent in late 1969 to 77.6 percent in December 1979. Young male workers (ages 16-19) increased their participation rates from 51.2 percent to 58.4 percent over the period. Early retirement accounted for the decline in participation rates of male workers over 55. More than 83 percent of the males age 55-64 were in the labor force at the end of 1969, compared to 72 percent a decade later.

The likely scenario suggests that an intermediate labor force growth rate in the range of 1.25 to 1.5 percent is anticipated for the 1980's. Lower birth rates have created smaller pools of workers for the future, but expansion of the labor force is likely to develop because of lifestyle trends which include multiple wage earners in one family; growing numbers of households headed by divorced, widowed, or never-married persons; and women's changed -- and still changing -- role in the workworld. The rise in the level of work experience and education of minorities and women will influence the size of any future labor force as will continued support of equal employment opportunity provisions.

Moderate growth in the next decade would lead to a 1990 labor force of roughly 120 million. The likely scenario is that labor force growth in the 1990's will result in a 2000 labor force in the range of 130 million people. Growth for the 1990's would be less than one percent a year. Factors which tend to support the 1990's growth include the increased number of women who already would be in the labor force and attempts to encourage older workers to remain in the labor force.

Young Workers

Young workers, ages 16-24, crowded the labor force during the 1970's and their numbers sent youth unemployment rates spiraling. Thus, the high fertility rates of the baby boom years had exerted its first impact on the labor force.

Gains in employment of young people were recorded as this segment increased its number of workers by 42 percent during the 1970's. At the same time, however, youth unemployment rose by 106 percent; and while all teenage unemployment rates were high, they were especially so for minority youths. The average

unemployment rate for all minority teenagers was 34.3 percent in late 1979, compared to a 13.9 percent unemployment rate for white youths. Although some unemployment is expected, the process of successfully entering the labor market clearly has more obstacles for minority youths than for whites.

For young people who could find work, wages were lower relative to those for older workers. With the sizable influx of workers, employers were in a position to hold down wage rates.

In addition to the impact on the labor force, this age group affected college circles as young people attended college in increasingly larger numbers. College enrollment climbed steadily during the 1970's. In 1969, there were 8 million people enrolled in college compared to 1979 when 11.7 million registered for college.

The decline of the fertility rate, beginning in the late 1960's, will result in a decrease in the number of young workers in the 1980's. The proportion of the labor force in the 16-24 year bracket will decrease by about 8 percent to reflect an absolute drop of nearly 2 million people by 1990.

As the 1970's began, there were 17.1 million people ages 16-24 in the labor force. This segment grew to 24.3 million persons by 1980, a 42 percent increase over the decade. A decline of close to 8 percent will reduce the 16-24 age section of the labor force to around 22 million by 1990 and another loss of 9 percent will place 20 million 16-24 in the 2000 labor force.

This coming scarcity of youth -- scarce when compared with the huge supply in past years -- should help ease youth unemployment. The reduced numbers of young workers could have positive influence for lesser skilled and initial entry jobs -- both classifications generally reserved for younger workers.

Minority young people, however, may not experience much improvement in unemployment. Even as the total number of persons (16-24) in the labor force drops, the proportion of minority members in the young category will increase. The total number of persons in this segment will dip nearly 2 million by 1990, but there will be about 3 million minority youths in the 1990 labor force -- slightly over the number of minority youth as in the labor force in late 1979. This means minority youth will increase its share in the 16-24 age section of the labor force. These statistics reflect less decline in the fertility rate for minorities than for whites. Unless targeted programs are geared to their specific needs, high unemployment rates for minorities will persist throughout the 1980's.

Lower birth rates produce a smaller pool of young people -- for entry into the labor force, college and military service. As the 1980's

began, there was an average of 12.5 million males in the 17-22 age group which is expected to decline to 10.6 million in 1990. The 17-22 male group is singled out for this discussion because more than 99 percent of the volunteers for the military come from this segment of the population. As the military services are forced to compete with civilian opportunities for a shrinking number of young people, military recruiting will become increasingly difficult.

In 1977, the Brookings Institution published a study on the military pool. According to study data, there were 3.8 million males qualified and available for military service in 1977, but the number is expected to drop to 3 million by 1990, a decline of 21 percent. Of the 1990 pool of 10.6 million, the study eliminates 4.6 million because of anticipated college enrollment. This study also eliminated from the projected available pool a number of young males who were likely to be institutionalized, in the military, unqualified for mental, physical or moral reasons, or were already likely to be veterans by then.

In 1977, one out of 11 of the 3.8 million males in the military pool needed to volunteer in order to meet the recruitment goal of 365,000 men per year. In 1990, one of eight in the military pool must volunteer to sustain the same goal, or other initiatives will have to be taken. Improved pay scales, greater opportunities for promotion and restructured retirement plans could encourage more and longer attachments to the service. Other options include the return of the draft to meet military demands, programs to retain those who have served their assigned tours of duty, and those who have qualified for retirement, or the recruitment of more female personnel.

Greater numbers of women in the armed services would help offset the reduction in the pool from which military personnel currently are drawn. Women's representation in the armed forces grew from less than 2 percent to 7 percent during the 1970's. The current goal of the armed forces is to increase the share of women on active duty to 11.5 percent by 1984. Two factors suggest that large numbers of qualified women might be attracted to military service: First, the available supply of female high school graduates of average or above average intelligence is barely being utilized by the military; and second, sex discrimination is not a factor in military pay as it frequently is in civilian pay.

Prime-Age Workers

By 1990, about one out of two persons in the labor force will be in the prime-age component of the labor force, ages 25-44. This group will expand from 47.6 million at the beginning of 1980 to an anticipated 65 million in 1990, an increase of 36 percent.

The declining birth rate and aging population could create a bulge in the middle-age layers of population and, thus, the labor force. Society will age with this critical group, and in 2000 about half the workforce should be 35-55 years.

At the beginning of 1970, the 25-44 age group accounted for 40.4 percent of the labor force, compared to 45.8 percent by 1980. This middle group is expected to increase its share to over 54 percent of the labor force by 1990, declining to about 51 percent by 2000.

Typically, the 25-44 age range includes years of high productivity when employees increase skills and work experience. The abundance of prime-age workers during the 1980's could form the basis for substantial improvements in the Nation's rate of economic growth although this will not diminish America's need to modernize its capital equipment. The large numbers of working-age persons, at least through the turn of the century, will strengthen the country's ability to provide for its non-working population as well. The prime-age years are also generally productive for workers individually because unemployment rates for this segment are low.

Workers in this category, however, will be in competition for promotion and supervisory positions. Competition is expected to intensify and numerous policy decisions will likely center on this group in the 1980's as the middle group clusters at mid-career. Based on past confrontations of this group about issues of prior decades, it is likely these workers will utilize innovative ways to resolve employment conflicts. The relative decline in opportunity for the prime-age cohort could lead to increasing unionization.

These are the same people who competed for their places in college and now the group will encounter rivalry from within its own ranks during its entire working life unless government and marketplace efforts can open wider employment and upper level opportunities of the future. Because of the size of the group, the workers may not obtain income gains as high as the pay increases generally associated with more work experience. With a lower birth rate and a smaller group of incoming labor, there would be less workers for the prime-age groups to supervise -- resulting in fewer promotion opportunities. Future developments in technology, however, could result in more automation in the workplace -- automation for which more supervisory personnel would be needed.

As consumers, this group should provide continuing strong prospects for household formation and durables during the 1980's. The youngest of the baby boom will reach household formation stage during the next decade. This fact, linked with trends toward two-earner families and the number of single persons setting up households, should reinforce housing markets. Household

formation during the 1980's is expected to average nearly 1.8 million a year -- up from the 1.5 million households started each year during the 1970's. During the 1960's, households were created at a rate of 1 million a year.

For the millions of Americans who will be in prime age during the 1980's and at the household formation stage, improvement of the economy is critical to their realization of the American dream of home ownership. The 1978 median price for a new home in the United States was \$55,600 compared to \$25,600 in 1969. The 1978 median family income was \$17,640 compared to the 1969 median income of \$9,433. The price of a new home has risen 117 percent since 1969 in contrast to the 87 percent increase in family income during the same period. Economic improvements -- reduced inflation, increased productivity, increased real earnings and improved competition -- will be especially vital to this huge segment of the population. Unless economic opportunities improve, this age group will not be so tolerant of government policy which erodes the standard of living.

Older Workers

The 65-plus population of the United States is currently growing at a rate twice that of the general population.

With fewer babies being born to provide balance to the population distribution, the middle-aged and older segments will continue to expand. Under present trends, by the year 2000, the population of the United States will have more than tripled during the century, but those over age 65 will have increased 10 times.

The entry of fewer workers into the labor force because of lower birth rates and the tendency of many workers to select early retirement may lead to development of new work life patterns for older persons. Into the twenty-first century, employers are expected to be more motivated to recruit and retain older workers than ever before.

People over 65 years old comprised 9.8 percent of the population in 1969, compared to 11.1 percent in 1979. It is anticipated that in 1990 this group will make up about 12 percent of the population and its share will inch to slightly over 12 percent by 2000.

It is after 2010, when the baby boom generation begins to retire, that the elderly will likely cause the dependency ratio to worsen if present trends in retirement, pensions, health care, etc. continue. There are now five persons of working age to each person over age 65. The ratio could decline to three working age persons for each person over 65 by 2030. It is the working age population whose taxes finance Social Security, Medicare and other Federal programs

for the elderly -- programs which now account for one-fourth of the Federal budget. If present policies are maintained, expenditures for aging programs will constitute 40 percent of the Federal outlay early in the next century.

A person who reaches age 65 can expect to live an average of another 16 years -- to age 81. There are currently 5.1 million people who are 80 years or older; in 2000 there will be roughly 8 million who are 80 or older. This outlook, combined with improvements in the health of older persons and demographic factors, may force a rethinking of what age is "old".

At issue in the future is whether work rates for the older group will continue to decline, stabilize or increase.

The participation rates of older workers -- particularly men -- have declined substantially. At the start of 1970, 83 percent of the men age 55-64 were in the labor force. By the beginning of 1980, 72 percent worked or were available to work.

The mandatory retirement age for the private sector was raised recently from 65 to 70. Mandatory retirement from the Federal Government was eliminated completely. These changes are certain to have an impact on the workplace, but it is too early to assess the influence on the current labor force. The excess of middle-aged workers may give employers less reason to encourage older persons to work until after 2000 when the labor force resources begin to falter. Employers then probably will offer older productive workers incentives to stay.

Another factor in retirement for persons who draw Social Security has been that program's policy on earned income of Social Security recipients. Beginning in 1980, recipients over age 65 may earn \$5,000 without penalty; however, earnings over \$5,000 are reduced by a ratio of \$1 in Social Security benefits for each \$2 in earnings. This \$5,000 ceiling will be raised to \$6,000 by 1982 -- representing a gradual expansion from the \$3,000 earnings limit in 1977. Social Security recipients over age 72 may earn unlimited amounts without penalty and in 1982 this provision will apply to all recipients 70 years old.

Increasing numbers of retirements -- particularly voluntary early retirements -- point to a desire to leave the workworld. However, there are trends being found which show a reversal of employee preferences for early retirement; a majority now indicate their desire to keep working past the normal retirement age.

Older Americans are a constituency of significant economic and social impact. Issues of concern to them get attention by policymakers. The need for older workers in the United States economy will make necessary less stringent Social Security

restrictions, delayed or phased-in retirement, more flexible work schedules and personnel policies which consider the older worker.

Business must recognize the impact which older Americans can make on the economy, both as workers and as consumers. They are already active politically -- in the 1978 Congressional election, the percentage of older Americans who voted was 10 points higher than the percentage for the total voting-age population (56 percent versus 46 percent).

There are increasing signals of the effect of the growth of the aging population on economic opportunities -- some of the signals novel. For example, as consumers, older Americans are having an impact on car rental business. Companies are offering discounts to specific retired groups -- groups which are now spending \$12 million a year on car rentals, a sign that pensions and earnings from full-time or part-time work are providing funds for expenditures outside basic essentials.

Women In The Labor Force

Women streamed into the labor force in the 1970's, catching the forecasters and analysts by surprise. About three out of five people entering the labor force during the decade were women. During 1979 alone, women garnered 1.4 million, or two out of three, of the 2.1 million jobs added to the economy.

Females are expected to have continuing significant impact by entering the labor force at the rate of nearly 1 million per year during the 1980's. The labor force participation rate for women was nearly 52 percent at the beginning of 1980, compared to 43 percent a decade earlier. The participation rate is expected to increase to about 60 percent by 1990 and stabilize at that point until 2000, according to some projections.

Women's escalating participation in the labor force is attributed to their changing role in society, to economic factors, the growth of the service industry, increased education and equal employment influences. Females now in the 25-35 year range are establishing different patterns of life from those of their mothers. They tend to work for pay, marry later, have lower birth rates, divorce more than their mothers and continue to work outside the home after children are born.

Forty percent of the people marrying today will divorce. During the 1970's, the divorce rate increased 51 percent. This, too, has been a force in the workworld. In the last 10 years, almost three out of five women added to the labor force were single, divorced, separated or widowed. The number of families headed by females has been growing seven times faster than traditional husband-wife families.

The changes in the work habits of married women, whose participation rates increased from more than 39 percent in 1969 to more than 49 percent in 1979, have resulted in thriving numbers of two-earner families. In 1979, over 56 percent of all married households in the United States had two or more workers, excluding self-employed individuals.

Economic influences for the working married women include inflation and the need for more family income -- whether to purchase basic necessities, a home, college education for children or luxuries. Working is mandated for economic reasons, in most cases, for the single woman or the female head of a household.

Of the women who work, nearly 62 percent have children under age 18; over 45 percent are mothers of children under age six. In 1979, more than 30 million youngsters under age 18 had working mothers. Of the 30 million children, 7 million were under age six and nearly 23 million were six to 18 years old. According to the Urban Institute, another 3.1 million mothers with children under six and an additional 5.5 million mothers with youngsters six to 17 will be working in 1990.

Current data reveals that labor force participation rises with greater amounts of schooling and women increasingly are investing in more education. In 1978, for the first time, more females enrolled in college than males. This trend was reinforced in the 1979 college enrollments. Women are receiving a growing share of doctoral degrees. In 1970 women received 13.5 percent of the doctorals awarded in the United States, compared to 26.4 percent in 1978, the last year for which figures are available.

While women have created greater opportunity through better education, they also have been the beneficiaries of equal employment opportunity programs -- especially younger women. Special problems, however, remain for older women re-entering the work force after long absences. In the past, women have been an intermittent work force, in and out of the labor market. Much of the recent growth in the female participation rate was due to a rise in the number of weeks worked during the year -- not just to an increase in the number of women in the labor force. In time, women's commitment to careers and accumulated seniority will ease the re-entry problems, but they are expected to continue while the female's role in work is still in formation.

Much of the employment growth in the past decade has been in the service sector where jobs are traditionally filled by women and younger workers. The continuing shift of the economy toward services will provide employment for many women, but women in the 1980's are still likely to experience higher than average rates of

unemployment and underemployment. The bunching of the middle layers of workers is likely to lessen the promotion opportunities for women and minorities as well as prime-age workers, as competition intensifies.

These developments could influence women to move to previously male-dominated areas of employment and away from the traditional female jobs; even though, as yet, societal sex roles -- particularly in the job market -- have not been overturned. This is supported in studies of wages for men and women. Contrary to popular perceptions, women's earnings are now less in relation to men's than they were 20 years ago. This is partly a result of occupational differences. In 1978 women employed fulltime and year-round made 59.4 percent of what men earned compared to 60.5 percent in 1969 and 61.3 in 1959. More than two-thirds of employed women now hold traditional female jobs such as teaching and nursing. As more women enter the labor force, the wages in female-oriented occupations will probably be driven down unless the number of jobs increases, too.

Minorities

The 1970's brought little improvement in the employment picture for minorities, both for cyclical and structural reasons. Jobless rates were high throughout the period and labor force participation rates declined as those looking for work simply dropped out of the job market in the face of a seemingly hopeless employment outlook.

Inadequate basic education, poor or non-existent job skills, obsolete job skills, location in depressed geographical areas, and discrimination were the main causes of minority unemployment. Comparisons of various groups of workers reveal the severity of the problem. In late 1979, black teenagers experienced unemployment rates of nearly 37 percent compared to about 14 percent for white teenagers and 34.3 percent for *all* minority youth.

Many stopped looking for work, decreasing the participation rates for minorities over the 10 year period. The participation rates for white and non-white males were fairly comparable at the start of the decade, measuring 80.1 percent for white males and 76.8 percent for non-white males. By the close of 1979, the gap had widened considerably as white male participation rates went to 78.5 percent and those for black males fell to 69.9 percent. Most of the difference came from trends for men under 35 years. The participation rate for white male teenagers was 66.1 percent in late 1979 compared to 39.7 percent for black male teenagers. In addition, incomes are lower for employed minorities. A comparison of earnings for fulltime and year-round male workers, in 1978, the

last year for which figures are available, reveals annual incomes of \$11,943 for Hispanics, \$12,530 for blacks, and \$16,360 for whites.

The problems of employment disadvantages and discrimination also show up in promotional opportunities available to minority workers who are still not receiving a fair share of higher wage jobs even though a large number of qualified or potentially qualified minority workers exists. A study by the Equal Employment Opportunity Commission found evidence of continuing discrimination in hiring, job assignments and promotion opportunities.

These problems are largely the result of employment disadvantages and discrimination: blacks are concentrated in lower-paying, less-skilled jobs and typically earn less than whites in the same occupation. In a major departure from previous patterns, however, the labor market for college-educated blacks improved considerably through the 1960's and 1970's. Among young graduates, the starting salaries and opportunities for blacks match or exceed those for whites.

Structural unemployment imposes economic and psychological costs on the jobless individuals along with substantial economic and social costs on the Nation as a whole. Economic costs include the lost incomes of the individuals and the payments for unemployment benefits, welfare, food stamps, as well as lost tax revenues on the incomes that individuals might otherwise have earned. For each percentage point in the unemployment rate there are direct and indirect losses of \$16-20 billion to the Federal Government, according to estimates. Economic costs also include the misallocation of human resources and the loss of output. When one group suffers more from unemployment than others, the Nation suffers pervasive and long-term maldistribution of income.

While demographic changes for the future may relieve the overall unemployment situation, minorities likely will continue to experience labor market problems. Minority population -- as a result of higher birth rates and immigration -- is expected to increase more rapidly than the population as a whole. By 1990, one out of every five Americans will be black or Hispanic, according to one study. Blacks will comprise 12.2 percent of the 1990 population; Hispanics will account for 7 percent of Americans in 1990.

Immigration produces additional labor force changes, although the extent is difficult to measure. During the 1970's the number of legal immigrants to the United States averaged 430,000 per year. There is no precise information on the number of illegal immigrants in the country, but appraisals of the total size of the group range from 3 million to 12 million. Estimates of the flow of illegal immigrants into and out of the United States vary from 300,000 to 1

million persons a year. Rapid population growth in Mexico, among other factors, could cause significant additional immigration to the United States through the rest of the century.

There is some dispute over the nature of the impact of illegal immigration on the labor force. What evidence exists suggests that illegal aliens are predominantly male, with low education by U.S. standards, and low-skilled. While some analysts claim that illegal immigrants fill jobs that American workers do not want, others believe the main effect is displacement, with illegal workers undercutting the unemployed by taking jobs that otherwise might have to be upgraded by employers.

The degree to which illegal aliens affect the economy is also a subject of debate. For example, there is some evidence that more illegal workers pay taxes than withdraw benefits from government programs and services.

These issues are indicative of the serious and complex nature of the illegal immigration problem which defies a quick and simplistic solution. For this reason, when Congress created the Select Commission on Immigration and Refugee Policy, it specifically directed the Commission to study the illegal immigration problem and make recommendations based on its findings. The Commission will examine U.S. Immigration laws and the procedures governing the admission of immigrants and refugees -- the first such comprehensive look by a Congressional-Presidential Commission since 1911. The Commission will review the relationship of immigration and refugee policy to economic growth, employment and unemployment, foreign policy, and the Nation's scientific, cultural and political life. Some of the questions to be addressed include:

- Should the number of people admitted to the United States increase, decrease, or remain the same?
- How should the total number of people admitted from each region of the world be determined?
- Should preferences be given according to demographic or labor goals, family ties, or other economic criteria?
- How can the immigration process become more rational, efficient and humane?

The Commission is to report to the President and the Congress by March 1, 1981, and consideration of policy implications should await that report.

Education

Education levels of workers have risen considerably since World War II. Responding to favorable earnings prospects, an increasing proportion of young people completed high school and

enrolled in college. College enrollments tripled and the number of graduates nearly doubled during the 1950's and 1960's with the boom overflowing into the early 1970's.

The pressure from the baby boom then shifted from the educational system to the labor market. An oversupply of college graduates drove down the economic value of a college education. Earnings of college graduates fell relative to those of high school graduates, and by some estimates, the advantage of a college degree in terms of higher lifetime income virtually disappeared. In 1978, one out of four employed college graduates held jobs traditionally requiring less formal education. And with graduates encountering such difficulties utilizing their backgrounds, new enrollments dropped at both the college and graduate levels.

The returns to investments in education could improve in the 1980's, as relatively fewer workers will have to vie with each other for entry-level positions. The job market for educated workers may still be prone to certain imbalances, however, excess supplies may develop in some fields that had reasonably good employment prospects in the 1970's if students adapt their choice of studies in response to past opportunities. Other areas may experience shortages -- particularly fields like engineering, physical sciences and economics that have greater employment possibilities in industry.

These changes suggest the need for continued examination of the relationships between work and education -- at all levels. Educational disadvantages -- including illiteracy and the most basic skill deficiencies -- pose insurmountable barriers to employment for many young people. In general, new links must be forged between education institutions, training programs and private employers to improve the transition from school to the labor market in the years ahead.

Lower fertility rates in America have led to a significant decrease in the enrollment of elementary schools where society's investment in future workers first begins. Secondary schools have experienced similar enrollment drops.

Elementary school enrollment, kindergarten through grade eight, crested in this country at 36.8 million students in 1969. There were 36.7 million elementary pupils in 1970 and 31.5 million in 1980. Enrollment is expected to decline into the mid-1980's and then rise slightly to near current levels of about 32 million in 1988. By 1990, elementary enrollment is expected to be close to 34 million, according to the National Council of Education Statistics.

America's largest senior class, numbering 3.2 million, graduated in 1977. High school enrollment is expected to decline

until 1988, when there will be 11.1 million students. By 1990, there will be 12 million high school pupils. The 1970 secondary enrollment was 13.3 million compared to 13.7 million in 1980.

Education is also affected by the fact that Americans migrate. While there is a declining school age population nationally, nine states experienced increases in school age young people from 1971 to 1978, according to one study. This trend is expected to continue in a few states until the mid-1980's. Energy boom towns and rural migration patterns could cause marked growth in some education systems.

There were 11.5 million students in college in 1979 -- 4 million more than were enrolled in 1969. By 1990, college enrollment is expected to dip to 10.9 million -- 600,000 less than the 1979 registration according to the National Council of Education Statistics. The number of full-time students in colleges is decreasing while part-time student enrollment is rising. As the college age group of the United States reduces in size, colleges can be expected to step up recruiting programs to attract students from the smaller pool. Especially threatened by demographic changes are the small, private four-year colleges, although continued inflation is also considered a cause. In contrast, many of the public community colleges are flourishing as they attract older individuals returning to formal education -- often while continuing to work. The median age of community college students is 27 years, compared to nearly 21 for the traditional four-year college. About 49 percent of full-time and 87 percent of part-time community college students are employed in either a full-time or substantial part-time capacity (including mothers with children at home).

Competition dictates that traditional colleges and universities become more flexible in admissions policies. There is growing acceptance of education as a lifelong pursuit. Coupled with an increased practice of multiple careers during a worker's lifetime, education can provide the basis for a new career or better employment. In the information society now in formation, continued education will be necessary to keep pace with developments in the field.

In addition, leaving and reentering the educational system will likely become more common because of new demands from existing jobs. The future employment market will require not only competency in the basic skills, but also attention to increasingly complex job-related skills that enable employees to adapt to changing technology, employment patterns and job opportunities. Some professions -- such as law, medicine and teaching -- already have continuing education requirements in numerous states.

Companies have recognized the education need with tuition-aid programs -- with the company assisting or paying education costs for employees.

A recession could accelerate the college reenrollment rate as unemployed or underemployed people return to school -- with the hope of being in a better position to catch the upswing of economic recovery.

Worker Attitudes

Economic and social changes since World War II have influenced worker attitudes of the labor force in the United States. Education, affluence and technology are dominating factors in determining worker attitudes in a workplace which has undergone a shift in employment from manufacturing and manual occupations to service, technical and professional occupations.

Few members of today's work force have a personal memory of the great depression. While unemployment has not disappeared, it is believed the fear of job loss does not exert the same pressure on the 1980 work force that it did on previous generations. To some extent, this pressure has been alleviated by union agreements which provide a variety of protections against arbitrary layoffs, some compensation when plants close down, and in some instances advance notice of layoffs. These agreements and other factors, such as better economic security arising from substantial improvements in employee benefits and improved living standards, have led to changes in the way workers perceive their jobs -- although just how jobs really are perceived seems to be a debatable question. However, there does seem to be a measure of agreement that something can be done in terms of influencing attitudes and thereby improving productivity.

Studies conducted during the middle to late 1970's seem to show that many workers were no longer preoccupied with the necessity to strive for survival and security, but rather that they had shifted attention toward a desire for greater self-fulfillment on the job. According to these studies, most workers:

- Were increasingly dissatisfied with specific aspects of their work.
- Felt that their skills and educational experience were being underutilized.
- Had more self-respect and wanted to be treated as individuals.
- Wanted opportunities to grow in their jobs.
- Wanted freedom to set their pace and the right to influence decisions affecting them.

Counter studies have challenged these findings and question whether sufficient evidence exists to prove:

- Widescale or growing discontent with work.
- That workers are demanding redesigned or enriched jobs.
- A need for workers to turn attention to self-fulfillment once financial security is achieved.
- That job redesigners know how to organize work in a way that would elicit sustained, high levels of human satisfaction and productivity.
- Low productivity among "overeducated youth."

This group would argue that while the degree of economic security now afforded workers is probably laudable, this security has been granted over the years in the form of entitlements or economic "rights" which has resulted in a concomitant reduction in the worker's sense of responsibility toward the quantity and quality of his work. During periods when rising inflation and higher taxes combine to erode real incomes of workers, these factors also serve as disincentives to work. What will motivate a worker or instill in him a sense of responsibility or job satisfaction will vary, since workers are not all alike. They have different needs and interests which are constantly changing.

Another study by the Bureau of Labor Statistics notes that the commitment to the work force of young adults (ages 20-24) is far stronger than in the past. Indeed it is now equal to that of the 25-44 group whose labor force participation rate is highest. In addition, evidence points to the fact that these workers are eager to make a contribution to the world.

American industry has available to it a vast potential resource in the form of the best educated work force in the world. It is a work force that appears in large part to be committed to work and is capable of improved performance, if properly motivated. How to bring out the best in the American worker who really feels that he is able to contribute, but in many instances may not be able to do so, will be an increasing challenge to American industry. A better blend of the interests of the worker and the company can result in payoffs in terms of increased worker satisfaction/responsibility and improved profit and productivity.

Regardless whether the worker today is poorly motivated because he is dissatisfied with his job or because he lacks a sense of responsibility toward his job, there does seem to be room for change in his role. There seems to be general agreement that one means of improving worker performance would be to encourage greater worker participation along with a shift from the traditional

adversarial relationship between labor and management to one of cooperation. Efforts to effect this enhanced cooperation and participation have been attempted here and abroad in a variety of programs.

In Japan, workers are organized into quality control circles to take responsibility for improving the quality of their work; in Germany, workers have won the right to membership on all corporate boards of directors; and in Yugoslavia, workers are now learning to manage state-owned firms.

It is not at all clear that the United States should or could adopt any of these models, because it is culturally, economically, and politically different from Japan, Germany and Yugoslavia. It is believed America can, however, learn from these nations that it is possible to increase worker participation and responsibility.

In fact, a growing number of American companies are drawing upon the experience of foreign nations, particularly that of Japan, and adapting ideas to fit their individual needs. While the movement is not widespread at this point, about 70 companies were experimenting in early 1980 with quality circles.

General Motors, in conjunction with the United Automobile workers, has established about 100 quality circles. One of the earliest of these experiments involved one of the company's older assembly plants at Tarrytown, New York. As a result of the effective cooperation between company management and the union, it is now reported that the number of workers' grievances has been sharply reduced; product quality has greatly improved, and warranty losses are markedly down; and absenteeism and turnover have also been reduced greatly. As a result of its improved efficiency, Tarrytown became one of the first plants to which the company assigned its new small car production. Another quality group solved a recurring problem of flat tires on some of its automobiles by recommending that a defective tire stem be replaced. The solution resulted in an annual savings of \$225,000 to the company.

At Northrop's aircraft plant in Hawthorne, California, a quality circle of mechanics assembling the F-5 military fighter plane found that workers kept breaking expensive drill bits when they bored into the titanium on the tail of the aircraft. After a lengthy analysis, the angle of the drill was changed slightly, resulting in fewer broken bits and savings of \$28,000 a year. American Airlines saved \$100,000 a year by acting on a suggestion of one of its quality circles to replace old hand grinders with new, more efficient tools.

The 1980 agreements between major steel companies and the United Steel Workers of America represent a notable breakthrough

in this area. The contracts include provisions calling for the organization of quality of work circles aimed at achieving twin goals of better humanizing work and improving worker productivity.

Since variations exist from firm to firm, and job to job, such cooperative efforts will vary depending on individual needs. Other cooperative labor-management programs have involved work redesign with the objective of increasing worker satisfaction and helping them to share in a larger degree of participation in decisionmaking, employee stock ownership plans, incentives for teaching other workers, peer-set salaries and raises, peer-established work/plant rules, self-managed quality control, and cash bonus plans.

Although the experience in this country has been limited, some evidence suggests that involving employees in management decisions and other areas of company operation has resulted in increased productivity, cost savings, and enhanced worker interest.

Over the coming years, the American economy will become more labor intensive as the service industries continue to grow. It will become increasingly important to derive best performance from this work force, for failure to do so will result in some degree of productivity loss. Greater advances in the area of labor-management cooperative efforts may prove useful in making optimum use of employees' skills and education experience, with resulting gains for the worker, the firm, and the Nation.

V STRUCTURE OF EMPLOYMENT

Growth Of Service Industries

Employment growth in the 1970's centered in the service and trade sector, with nine out of ten new jobs during the decade in service industries. By the end of 1979, services accounted for 67 percent of all jobs in the economy, compared to 60 percent in 1969 and nearly 55 percent in 1959.

The goods producing sector of the economy provided one-third of all jobs at the end of the 1970's. The share of employment in goods producing industries declined from 45 percent in 1959 to 40 percent in 1969 to 33 percent in 1979.

The transfer in employment away from goods producing and toward service industries coincided with changes in the supply of labor. Those industries which expanded most rapidly -- such as retail trade, insurance and professional services -- generally have had higher proportions of women and young workers as employees.

While service industries benefited from large numbers of workers available at entry level wages, the major impetus to change in the industrial structure of employment was a changing pattern in the demand for labor. The 1970's marked a general shift to industries requiring larger numbers of workers. These labor-intensive industries were less adversely affected by rising energy costs, the impact of government regulations and other policies which made capital investment more costly.

Consumers changed their spending patterns during this period -- away from nondurables to services and durable goods, contributing to service industry growth. Large numbers entering the household formation stage and increased incomes in two-earner families -- plus liberalized use of credit -- provided a strong market for appliances, furniture, automobiles, fast-food restaurants, and other time-saving services. Unlike the service sector, however, employment in durable goods manufacturing did not increase as sharply in response to consumer demand.

Employment growth for the next two decades is expected to follow the pattern set in the 1970's. New household formations and two-earner families should keep the demand for housing and household-related durable goods growing at a relatively strong pace through the 1980's. This growth expectation suggests a moderate employment increase is possible in durable goods manufacturing industries; but productivity, import levels and cyclical factors will influence the degree of employment growth in manufacturing industries.

Demographic factors point to continued strong demand for housing through the 1980's, which should spur growth in the construction industry if other economic factors are resolved. During the 1980's there will be an approximate 33 percent increase in the number of family heads in the central age bracket, 25-44, the group that has traditionally purchased or occupied the majority of new housing. By 1990, it is projected there will be 87 million households, a 16 percent increase over 1980. Of these new households, 75 percent (9 million of the 12 million) will likely be headed by persons under age 45.

As the older population increases in size, the demand for health care and related services will expand. Technological changes, particularly in the area of telecommunications, will result in the growth of new types of industries and employment.

Some experts contend that the pace of the service sector employment growth may slow. There will be fewer young workers available because of the lower fertility rates; and some industries may substitute capital for labor. New technology will increasingly mechanize many of the occupations which now hire large numbers of women, potentially affecting such jobs as telephone operators, bank tellers, sales workers, food service workers and secretaries.

A variety of factors will likely influence the substitution of capital for labor in service industries such as the availability and cost of capital. Too, the crowding of the prime-age worker group (age 25-44) could cause some of these workers to spill over into jobs which would generally be considered for entry level workers. This shift would offset the reduced numbers of young workers coming into the labor force who usually are the primary candidates for entry level positions.

Structural Shifts

Broad shifts in the industrial structure of the United States tell only part of the story. Patterns of employment in individual occupations and narrower categories have often changed sharply, making growth industries of one decade the declining industries of the next. The aerospace industry and the teaching profession went through such boom-to-bust cycles, while mining reversed a two-decade decline and expanded rapidly in the 1970's.

Methods to forecast structural shifts in large categories of industries are more accurate than attempts to identify coming changes for detailed occupations. More accurate projection methods would aid in matching human resources to employment needs and in minimizing long-term displacement of workers.

The impact of structural shifts on some individual U.S. industries threatens to be particularly severe in the years ahead. The

steel industry is suffering from the effects of foreign competition and changes in domestic demand. Some of the same problems threaten the automobile industry. The huge investments needed to shift production to smaller cars, competition from foreign manufacturers, and rising gasoline prices continue to have a substantial impact on United States automakers into the 1980's.

The problems of displacement in industries like steel and automobiles will require major revisions in the country's training and retraining programs. Current programs are not equipped to cope with large scale dislocations, involving tens or even hundreds of thousands of workers. Successful adjustments in these cases will depend on maintaining a strong overall rate of economic growth and forging new links in the retraining and placement processes between government and the private sector.

Occupational Changes

White collar jobs accounted for nearly two-thirds of the employment growth during the 1970's, as the swing from blue collar to white collar jobs continued.

At the advent of the 1980's, white collar occupations represented 51 percent of total employment, compared to about 48 percent at the start of 1970. Blue collar occupations accounted for about one-fifth of the employment growth during the 1970's, but as a percent of total employment, the blue collar share actually declined during the decade -- from 36 percent to 33 percent.

The remaining jobs -- farm and service occupations such as waiters and police -- supplied very little of the decade's employment growth. Service occupations increased slightly from 12 percent in late 1969 to 13 percent at the end of 1979; farm occupations, as a proportion of total employment, declined from nearly 4 percent to about 3 percent.

Rapid growth in the professional and technical category is a key factor in the growth of white collar occupations. A sharp drop in operative jobs -- such as assembly line workers, laundry/dry cleaning workers and dressmakers -- contributed to the decline in the number of blue collar workers.

Growth of service and trade industries -- which tend to employ a higher number of white collar workers -- paralleled the growth in the white collar occupations. However, even in industries which tend to employ more blue collar workers -- such as manufacturing -- the number of white collar workers grew at a faster pace than the number of production workers.

Projected growth for service and trade industries in the 1980's points to large employment gains in white collar occupations.

Further gains can be expected for sales, managerial and administrative workers as services and trade expand. White collar technical jobs should increase fairly rapidly along with advances in technology in the capital intensive goods producing industries. Meanwhile blue collar employment is likely to decline slightly in the 1980's.

Technological Change

Technological change will influence the American workplace in the next decades as the United States enters the age of the information society. The impacts of low-cost computers, distributed computing and microprocessors could be enormous in terms of the way Americans live and work. The effects of the interaction between these technologies and development in the use of laser beams will parallel those of advances in transportation, communications and energy in earlier generations.

Robots -- with the aid of computers and microprocessors -- are already being utilized in automotive, aerospace, appliance, metalworking, glass, rubber, and machinery industries. They are performing a variety of tasks, including welding, painting, cutting, assembling and machine loading. Worldwide robot sales in 1979 were \$279 million and are expected to grow to \$4.6 billion by 1990. Last year Japan and the United States were closely matched in total value of robot sales, with about \$90 million each. Robot sales, as a portion of gross national product, were greater in Japan, however, because of the differences in the size of the two economies. As a share of GNP, Japan spent three times as much on robots as the United States did. By 1984 the Japanese government plans to have an unmanned metalworking plant on line, producing machinery components ranging from hydraulic pumps to heavy duty transmissions. Every operation from casting to final inspection will be handled by flexible automatic systems and robots, all supervised by a central computer and a few engineers and technicians.

While robotic machinery currently performs relatively simple tasks, developments in the area of sighted robots will allow for the integration of the machinery into more complex operations. One company has developed a robot with visual and tactile capabilities that can assemble a finished product from a jumbled assortment of parts. While such a machine now operates with the assistance of television cameras at a slow pace, experiments underway with digital processing and laser scans will significantly cut the robot's assembling time.

The combination of computer technology, miniprocessors and communication via laser light will have significant effects on the office of the future and microelectronics undoubtedly will have a

major impact on the performance of many clerical and administrative jobs. In the office of the future, most of the paper-handling routines that consume so much time and space will likely be gone.

Once the electronic office and advanced robotic machinery comes on line, the impact could be immense. Many workers and clerical assistants may be replaced through automation. But, at the same time, large numbers of highly skilled technical and engineering jobs could be created, too.

The social impact of this revolution is expected to be dramatic. Many have raised the spectre of vastly increased unemployment as robots and other machinery replace millions of workers. Others believe that fears of automation-induced unemployment appear unfounded. As long as markets and production expand, increased productivity does not have to result in reduced employment. Over the past decades, increases in industrial productivity were accompanied by growing employment figures.

Nonetheless, significant adjustments will be required and retraining promises to be at the top of the list. The jobs created by widespread use of robots and other forms of electronic devices -- technicians, programmers, engineers -- for the most part will require a greater degree of technical training. To prevent the creation of an oversupply of workers whose skills have become or may become obsolete, and a simultaneous shortage of engineers and technicians, training and education programs which are more carefully coordinated with market developments will be needed.

Some companies have already acknowledged this adjustment need in tuition-aid programs whereby the company pays all or part of the pertinent costs of employees enrolled in formal education or training courses at conventional institutions. Currently, only a small percent of several million covered employees participate; however, there is indication that a much larger rate of participation can be expected where companies make a deliberate implementation effort.

Work Time: Greater Flexibility

Popular interest in alternative ways of structuring time at work has grown steadily in recent years, reflecting the increased labor participation of women as well as other lifestyle changes. Currently, about 13 percent of American businesses and 6 percent of all workers have flexible work schedules of some kind. Plans that vary the timing of work hours, along with increased vacation time earned, is likely to become increasingly commonplace in the 1980's.

While less practical for assembly lines and multi-purpose work situations, the typical pattern of permitting people to work a core

period of time each day, (for example, from 10 a.m. to 3 p.m.), while varying their arrival and leaving hours has been relatively easy to implement in offices and some service industries.

The expansion of part-time work opportunities has provided another means of accommodating workers' needs for additional flexibility. Future growth -- at least of permanent part-time positions -- will probably be slower, however. Because of rising payroll taxes for Social Security and unemployment insurance, as well as the fringe benefit requirements in many labor contracts, hiring part-timers could be considerably more costly to an employer than other alternatives.

For full-time workers, a 40 hour week is still the norm. After dropping from 58 to 42 hours between 1900 and 1940, the average work week for fulltime males has changed relatively little in the past four decades. Since reductions in the work week generally accompany increases in productivity -- which was rising at the rate of 3 percent a year during the first two post-war decades -- the stability of the 40 hour week was not expected.

By other measures, however, total time spent at work has increased. Many of the women and teenagers holding part-time jobs, for example, were previously not in the labor force.

With the future increase in the ratio of prime-age workers, the growth of vacation time and paid holidays will probably further reduce time spent at work. The average vacation period in the United States is still only two weeks, reflecting the relatively short average job tenure in private industry. But with many establishments offering 4 to 6 weeks of vacation to experienced workers, vacation patterns may change significantly as the new entrants of the last two decades gain seniority on the job.

Length of job tenure with a particular company is the usual basis for vacation eligibility in the United States. In 1978, it was estimated that average job tenure was 3.6 years, down from 3.9 years in 1973. This reduction was the result of the large labor force inflow of teenagers and women. In 1978, as many as 28 percent of the employed population had been on their jobs less than one year and the average length of vacation was 2.0 weeks, compared to 1.9 weeks in 1968.

The baby boom group which will form the prime-age work force in the 1980's and the 1990's is expected to change that, as there will be many more workers with longer job tenures. These prime-age workers are also expected to be less mobile, choosing to stay with the same job longer than past generations. This would result in an increase in the average length of vacation time and increased vacation benefits being paid by employers.

Special Study on Economic Change

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The Human Resources and Demographics section of the Special Study on Economic Change, Joint Economic Committee, is one of 10 sections to be released over the next several weeks. Final printing later this year will include all areas of the special study. Orders for this Human Resources and Demographics study may be placed by contacting:

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